

Alternative 3 and 4
Option D

Bunker Hill
Acid Mine Drainage
Onsite Landfill - Smelter Closure Area
Order of Magnitude Cost Opinion

DATE: 11/29/2000
PROJECT NO.: 152215.FS.02
ESTIMATE BY: D. Hedglin

DESCRIPTION	QTY	QTY Reduced by 10%	UNIT	TOTAL UNIT COST	TOTAL COST
0.90					
Sitework					
Clear and Grub	20		AC	3,000.00	\$60,000
Site Prep Excavation	300,000	270,000	CY	3.30	\$891,000
Site Prep Fill	300,000	270,000	CY	1.10	\$297,000
Pipeline					
6" HDPE Gravity Pipeline in Trench	2,500		LF	22.50	\$56,249
Manhole	8		EA	3,850.00	\$32,083
Landfill Construction					
Excavation	58,000	52,200	CY	3.30	\$172,260
Subgrade Preparation	13	11	AC	3,300.00	\$37,719
Subgrade Stabilization	20,537	18,483	CY	4.40	\$81,327
Embankment Fill	63,265	56,939	CY	11.00	\$626,324
Liner Protection Sand	18,000	16,200	CY	19.80	\$320,760
Drain Rock	5,100	4,590	CY	19.80	\$90,882
Ditch Lining Geotextile	35,400	31,860	SY	1.82	\$57,826
G C L	35,400	31,860	SY	4.46	\$141,936
H D P E Geomembrane	35,400	31,860	SY	5.94	\$189,248
H D P E Pipe, 12"	2,000	1,800	LF	28.60	\$51,480
Erosion Control Matting	19,500	17,550	SY	1.65	\$28,958
Perf Pipe, 6"	650	585	LF	3.30	\$1,931
Strip Drains	1,180	1,062	LF	1.93	\$2,044
Filtrate Penetration Sump (Allowance)	1		EA	27,500.00	\$27,500
HDPE Pipe, 6"	150	135	LF	2.75	\$371
Water Tight Manhole	1		EA	3,850.00	\$3,850
Cleanouts	2		EA	825.00	\$1,650
Chain Link Fence and Gates	3,060		LF	13.20	\$40,392
Groundwater Monitoring Wells	4		EA	6,600.00	\$26,400
Crushed Rock Surfacing	2,270		CY	16.50	\$37,455
SUBTOTAL					\$3,276,645
MISC ALLOWANCE	10%				\$327,664
SUBTOTAL					\$3,604,309
CONTINGENCY	15%				\$540,646
SUBTOTAL					\$4,144,955
MOBILIZATION	15%				\$621,743
CONSTRUCTION TOTAL					\$4,766,699
SALES TAX ON MATERIALS	5%				\$45,140
ENGINEERING AND SUPPORT	20%				\$953,340
CONSTRUCTION MANAGEMENT	8%				\$381,336
CAPITAL TOTAL (ROUNDED)					\$6,147,000

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DESCRIPTION	QTY	QTY Reduced by 10%	UNIT	TOTAL UNIT COST	TOTAL COST
		0.90			
ANNUAL O&M COST				\$94,000	
CAPITAL COST OF CLOSURE @ YEAR 31				\$1,960,000	
NPV OF ANNUAL O&M COSTS (30 YEARS @ 7% INTEREST)					\$1,170,000
NPV OF CLOSURE COST (YEAR 31 @ 7% INTEREST)					\$241,000
TOTAL 30-YEAR PRESENT WORTH COST @ 7% INTEREST					\$7,558,000

NOTES:

- Landfill post-closure costs are not included here since they extend beyond the 30 year period.
- Misc Allowance markup is to include items known to exist but cannot be quantified at this time.
- Contingency is for scope changes that are presently unforeseen.
- Mobilization includes bonds, insurance, temporary facilities, health & safety, demobilization, etc.

NOTE: The above cost opinion is in November 2000 dollars and does not include escalation. The order of magnitude cost opinion shown has been prepared for guidance in project evaluation at the time of preparation. The final costs of the project will depend on actual labor and material costs, actual site conditions, productivity, competitive market conditions, final project scope, final schedule and other variable factors. As a result, the final project costs will vary from those presented above. Because of these factors, funding needs must be carefully reviewed prior to making specific financial decisions or establishing final budgets.